



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/772,908

02/05/2004

Thomas G. Cehelnik

25059.NP

5226

20551

7590

11/08/2005

THORPE NORTH & WESTERN, LLP.
8180 SOUTH 700 EAST, SUITE 200
SANDY, UT 84070

EXAMINER

NATALINI, JEFF WILLIAM

ART UNIT

PAPER NUMBER

2858

DATE MAILED: 11/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/772,908

Applicant(s)

CEHELNIK, THOMAS G.

Examiner

Jeff Natalini

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-40 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 21-25 and 30-40 is/are rejected.
7) ☒ Claim(s) 26-29 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 29 August 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, wherein the device is a part of a control system for an electrical apparatus and the output of the second stage amplifier is connected to the control system (claim 31) and wherein the background noise is created by power lines in the vicinity of the sensor (claim 37) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Response to Amendment

2. The amendment filed 8/29/05 (mainly claims 26) is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: Presently presented claim 26, stating wherein the first stage amplifier has an input impedance high enough to preserve the output voltage signal from the sensor and to keep the sensor floating at the voltage of the background electric field, but small enough to keep the corner frequency of the high pass filter near the frequency of the background electric field does not have proper support from the previous submitted specification or claims (because claim 26 does not have proper support claims 27-29 which depend from claim 26 also lack proper support).

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 36-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Zank et al. (6922059).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

In regard to claims 36 and 38, Zank et al. discloses a method for controlling electrical apparatus by a body gesture within an interaction zone (abstract, col 6 line 2-4), comprising the steps of:

positioning a sensor (fig 1 (50) or fig 3 (300)) to pick up electrical fields existing in the interaction zone and to provide an output voltage signal representative of the electrical fields sensed (fig 5a), the electrical fields sensed including a background electrical field of a particular frequency (this is seen in fig 5a, at the very beginning and very end the signal starts at a certain frequency and returns to this frequency as the medium disappears);

eliminating output voltage signal components below a predetermined frequency (fig 3 (340); will eliminate some signal components below 60Hz);

thereafter eliminating output voltage signal components above a predetermined frequency (fig 3 (350));

amplifying the resultant signal to provide a processed output signal representative of the electric fields sensed by the sensor within a desired range of frequencies at a particular time (360);

performing a particular body gesture in the interaction zone and obtaining a plurality of consecutive processed signals over a period of time representing the particular body gesture to create a predefined body gesture signal representative of the particular body gesture (col 6 line 36-52, plurality of processed information signals seen in figs 5a and also 5b);

monitoring further processed output signals over monitoring periods of time (a home security device would monitor continuously (col 6 line 54-57); monitoring over a period of time is seen in figs 5a and 5b in the x-axis);

comparing the monitored processed output signals (which would include signals where no movement is detected) with the predefined body gesture signal to determine if the predefined body signal is performed and providing an occurrence signal if the gesture is performed (col 6 line 36-38);

and using the gesture signal to control the electrical apparatus (col 6 line 38-42, an alarm is sounded or light is emitted by the electrical apparatus).

In regard to claim 37, Zank et al. discloses wherein the background electrical field of a particular frequency is an AC background noise field between about fifty hertz and about sixty hertz created by power lines in vicinity of the sensor (col 11 line 41-45).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 21 is rejected under 35 U.S.C. 103(a) as being obvious over Zank et al. (6922059).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

In regard to claim 21, Zank et al. discloses a device for sensing presence and motion of a body in an interaction zone comprising (col 6 line 50-53):

a sensor (fig 3 (300)) positioned to pick up electrical fields existing in the interaction zone and providing an output voltage signal representative of the electrical fields sensed (abstract);

a first stage buffer amplifier having an input and an output (310);

a high pass filter (340, would allow high frequencies to pass);

a second stage amplifier having an input and an output (360);

a low pass filter connecting the output of the first stage buffer amplifier to the input of the second stage amplifier (350, is controllable to be a lowpass filter);

wherein the output of the second stage amplifier is a signal representative of the electrical fields sensed by the sensor (abstract, can also be seen in figure 1, output (100)) within a desired range of frequencies (the filters would provide a desired range of frequencies).

Zank et al. lacks specifically wherein the high pass filter connects the output of the first stage buffer amplifier to the input of the second stage amplifier.

MPEP 2144.04 VI C Rearrangement of parts, In re Kuhle, 526 F.2d 553, 188 USPQ 7 (CCPA) states that the particular placement of a contact in a conductivity measuring device was held to be an obvious matter of design choice.

It would have been obvious to one with ordinary skill in the art at the time the invention was made as stated in MPEP 2144.04 VI C, that filtering a voltage signal before amplifying the signal could easily replace amplifying the voltage signal and then filtering it would provide that same functionality to the device as the unwanted part of the signal will be removed in both cases.

7. Claims 22, 31-33, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zank et al. (6922059) in view of Peters (5028875).

In regard to claim 22, Zank et al. lacks specifically wherein the sensor has electrical characteristics of an electric source in series with a capacitor.

Peters discloses a motion sensor (col 1 line 21-24) that discloses a Thevenin equivalent circuit of the sensor having electrical characteristics of an electric source in series with a capacitor (fig 4; col 4 line 22-25).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Zank et al. to incorporate a Thevenin equivalent circuit of the sensor (electrical source in series with a capacitor) as taught by Peters in order to obtain an equivalent circuit model of the sensor for analysis (fig 4).

In regard to claim 30, Zank et al. discloses wherein the body in the interaction zone acts as an electric source to increase the output voltage of the sensor (figs 5a and 5b show how the body movement increases the voltage output of the sensor, also it can be decreases which is also seen).

In regard to claim 31, Zank et al. discloses wherein the device is a part of a control system for an electrical apparatus and the output of the second stage amplifier is connected to the control system whereby a body motion in the interaction zone at least partially controls the apparatus (col 6 line 36-52, a person that walks pass a certain location can trigger and alarm or light from the device).

In regard to claim 32, Zank et al. discloses wherein the control system includes at least one pair of related sensors wherein the system determines motion of the body along an axis between the pair of related sensors (fig 5a, two sensors detect the motion of a truck passing by col 10 line 3-5).

In regard to claim 33, Zank et al. discloses wherein two pairs of related sensors are used to determine motion of the body in two dimensions in the interaction zone (fig 7a shows the use of two sensors for two dimensions, col 10 line 8-9).

In regard to claim 35, Zank et al. discloses wherein the electrical apparatus to be controlled is a computer including a display device, and wherein the device sensor is part of the computer display device (col 15 line 24-29).

8. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zank et al. (6922059) and Peters (5028875) as applied to claim 22 above, and further in view of McDonnell et al. (6445294).

In regard to claim 23, Zank et al. as discloses wherein the body in the interaction zone creates a capacitance electrically in parallel with the sensor (col 10 line 35-40).

Zank et al. lacks specifically stating that the amount of capacitance created by the body gets greater as the object gets closer to the sensor.

McDonnell et al. discloses wherein the capacitance detected increase as the electric field influencing media gets closer to the sensor (fig 6, shows the inphase and out of phase capacitances increasing).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate into Zank et al. as modified by Peters the knowledge that the capacitance increases as the object gets closer to the sensor as taught by McDonnell et al. in order to compensate for offsets in the measurements (col 6 line 15-23).

In regard to claim 24, Zank et al. discloses wherein the capacitance in the interaction zone decreases the output voltage signal of the sensor (fig 5a, col 15 line 40-60), and McDonnell has taught from above (claim 23) that the capacitance depends on the position of the media (body) in the interaction zone.

In regard to claim 25, Zank et al. discloses wherein the sensor senses a background electric field in the interaction zone (fig 5a, col 15 line 40-60).

9. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zank et al. (6922059) in view of Peters (5028875) as applied to claim 33 above, and further in view of Nakamura et al. (5408411).

Zank et al. as modified by McDonnell et al. lacks specifically wherein three pairs of related sensors are used to determine motion of the body in three dimensions in the interaction zone.

Nakamura et al. teaches six sensors the will detect motion in three dimensions (X, Y, and Z) (fig 4 , col 27 line 55 – col 28 line 3).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Zank et al. as modified by Peters to include six sensors

enabling detection in three dimensions as taught by Nakamura et al. in order to be able to graph the angular movement of the media being sensed (col 27 line 62 – col 28 line 3).

10. Claims 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zank et al. (6922059) in view of Hwang (6628265).

In regard to claim 39, Zank et al. discloses wherein the electrical apparatus to be controlled is an apparatus having a display device (col 15 line 24-29).

Zank et al. lacks specifically wherein the sensor is part of the display device to create an interaction zone adjacent the display device.

Hwang discloses wherein the sensor is part of the display device to create an interaction zone adjacent the display device (abstract, figure 1).

It would have been obvious to one with ordinary skill in the art at the time the invention was made for Zank et al. to include wherein the sensor is part of the display device to create an interaction zone adjacent the display device as taught by Hwang in order to be able to incorporate the motion of a human into a video game (abstract).

In regard to claim 40, Zank et al. discloses wherein the step of positioning a sensor to pick up electrical fields existing in the interaction zone and to provide an output voltage signal representative of the electrical fields sensed includes the step of positioning a pair of related sensor to pick up electrical fields existing in the interaction zone and to provide an output voltage representative of the electrical fields sensed by at

least one related pair of sensors representative of the motion of the body along an axis between the pair of related sensors (fig 5b, col 15 line 62-col 16 line 5).

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

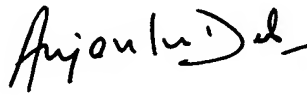
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Natalini whose telephone number is 571-272-2266. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on 571-272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeff Natalini



**ANJAN DEB
PRIMARY EXAMINER**